

Commodity Spotlight



Forces Shaping the U.S. Wheat Economy

The U.S. wheat sector enters the new century facing many challenges, despite a strong domestic market for wheat products. U.S. wheat area is dropping off because of declining returns relative to other crops, stemming in large part from continued sharp competition from abroad and structural changes in world markets. U.S. wheat exports have held fairly steady since the mid-1990's, even as global trade has trended up. In the wake of trade liberalization under the North America Free Trade Agreement (NAFTA), the U.S. has emerged during the 1990's as a steady importer of wheat and as a significant market for Canadian wheat exports.

The share of domestic wheat production milled for food use has grown, as the share for animal feed and exports has declined. During the past quarter century, U.S. per capita consumption of wheat as food products has risen, although foreign producers have captured a share of the expanded domestic market. In the 1998/99 crop year, domestic per capita wheat consumption dropped off. The expected rebound during 2000/01 will still fall short of the 1997 peak.

Consumption Rebound Benefits Processing Industry

The rise in U.S. per capita wheat consumption (measured as flour and the flour equivalent in food products such as bread, cookies, and pasta) is the extension of an historic turnaround that occurred in the 1970's. For nearly 100 years, per capita wheat consumption had declined in the U.S., as physical labor declined and diets diversified. Wheat consumption had dropped from over 225 pounds per person in 1879 to 180 pounds in 1925, bottoming out at 110 pounds in 1972.

By 1997, U.S. per capita wheat consumption was back up to 149.5 pounds, the highest since the 1940's. The rebound in consumption was surprising to some, because wheat products were not considered preferred foodstuffs for consumers with rising incomes. But the overall growth in per capita consumption that occurred between 1973 and 1997 reflected some changes that included the boom in away-from-home eating, the desire of consumers for greater variety and more convenience in food products, promotion of wheat flour and pasta products by industry organizations, and wider recognition of health benefits stemming from eating high-fiber grain-based foods.

Canadian wheat producers reaped part of the gains from this increased demand. Before the 1990's, the U.S. had generally imported only small amounts of wheat and wheat products, mostly from Canada. In the early 1990's, however, imports began to climb rapidly, and by 1993/94, wheat imports from Canada reached a record 2.4 million tons, although much of that was damaged grain to be used for feed. Recently, however, most imports from Canada are high-quality grain to be used in bread and pasta. Imports of durum and hard red spring (HRS) wheat from Canada are equivalent to about 20 percent of U.S. consumption of those wheat classes.

Imports are not likely to decline to pre-1990 levels in the near future. NAFTA has ended tariffs and eliminated quotas for wheat trade between the U.S. and Canada. The 1995 elimination of transportation subsidies to Canadian growers for moving grain to ocean export terminals in Vancouver and Thunder Bay has rendered shipping to the U.S. relatively less costly than to overseas markets.

The rise in per capita consumption has benefited the U.S. wheat processing industry. Over the last 25 years, the industry has been able to operate near full capacity while expanding and modernizing. Existing mills at traditional milling centers such as Kansas City, Minneapolis, and Buffalo have been enlarged, while new mills have been built near major population centers in California and other states.

Prior to the 1960's, mills were typically built near major wheat producing regions because rail rates for shipping wheat (an easily storable item) and wheat flour (a more perishable product) were equalized under a rail transit rate structure, regardless of where the mill was located between the grain origination point and destination of the flour. When use of this rate structure ended and railroad companies began to adopt cost-saving hopper-cart technology and multi-car discount rates—suitable for shipping large quantities of bulk grain headed for mills but not for smaller quantities of flour on the way to bakers—costs for transporting wheat fell relative to flour. As a result, mills producing bulk flour were often built closer to population centers that supported

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production of highly perishable products such as bread. Siting their facilities near purchasers, bulk-flour millers could directly supply bakers and avoid the need for a local flour storage facility or a local distributor.

In contrast, wheat products that are less perishable need not be manufactured in close proximity to purchasers. For example, bagged flour and pasta products are produced and distributed over a very wide market area because they can easily be transported a considerable distance to customers. Millers supplying bagged wheat flour or semolina for pasta (milled from durum wheat) may choose to locate mills at sites with access to national transportation facilities central to several urban centers.

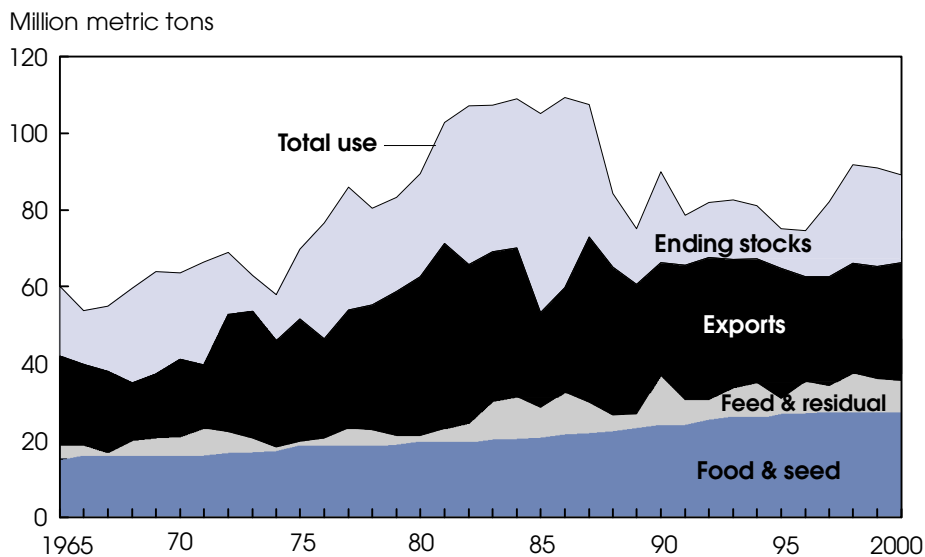
Total growth in the domestic market is not just a function of food use. Wheat is also fed to livestock, but this component is volatile, with year-to-year changes stemming mainly from the availability of substantial quantities of low-quality wheat. Demand for wheat as feed depends largely on the price of wheat relative to corn and other feed grains. However, in general, the price of feed wheat is not high enough to provide an incentive for producers to grow wheat just for feeding.

U.S. Export Lead Narrows

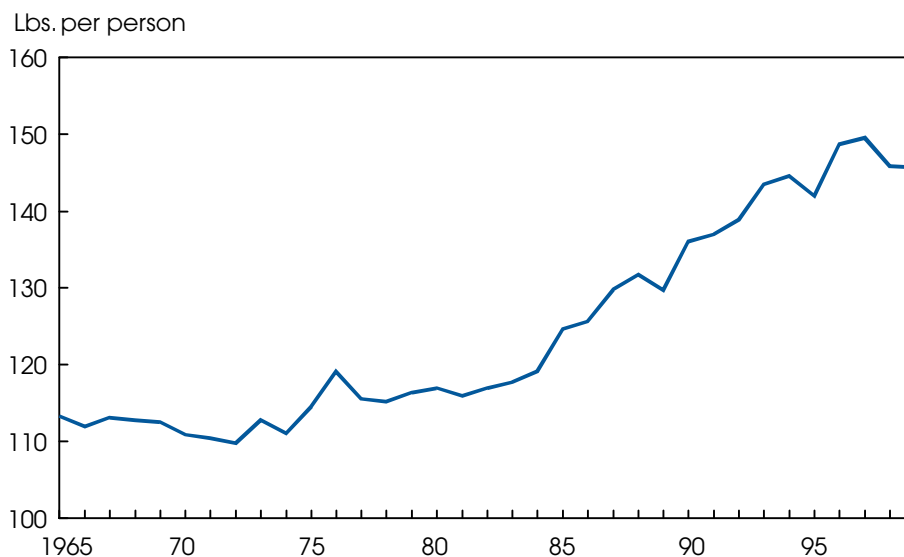
In the 1990's, world wheat production and consumption have continued to expand in response to rising population and incomes, and the volume of world wheat trade has gained slightly. Distribution of global wheat trade has broadened as smaller purchases by a larger number of importing countries—in Southeast Asia, North Africa, and the Middle East—have become more important than the very large purchases by the former Soviet Union and China.

The breakup of the Soviet Union led to a reduction of wheat imports into the region. Initially, it appeared that import growth elsewhere would outweigh this loss. Later, however, China, another major importer, also cut wheat imports, because of large domestic production and a flattening in per capita wheat consumption. Aggregate world trade has continued growing, albeit slowly in recent years, but

Food Use of U.S. Wheat Continues to Grow . . .



. . . While Per Capita Consumption of Wheat and Wheat Products Drops Off Slightly



Wheat consumption as food.
Consumption = Wheat flour plus wheat-flour equivalent in manufactured food products.
Economic Research Service, USDA

the U.S. has lost market share, narrowing its lead over other exporting countries.

Loss of U.S. market share during the 1990's was attributable partially to an agricultural boom in Argentina that began in the mid-1990's following the country's agricultural reforms. Australia and Canada

also gained on U.S. market share. Erosion of U.S. share continues a trend from losses incurred in the 1970's and 1980's due to rapidly rising exports from the European Union (EU). Protected trade among EU member countries soared in the 1970's and 1980's, remaining competitive with outside suppliers in the 1990's.

EU exports to nonmember countries also jumped during the 1980's. But reforms have helped curtail EU wheat exports in the 1990's.

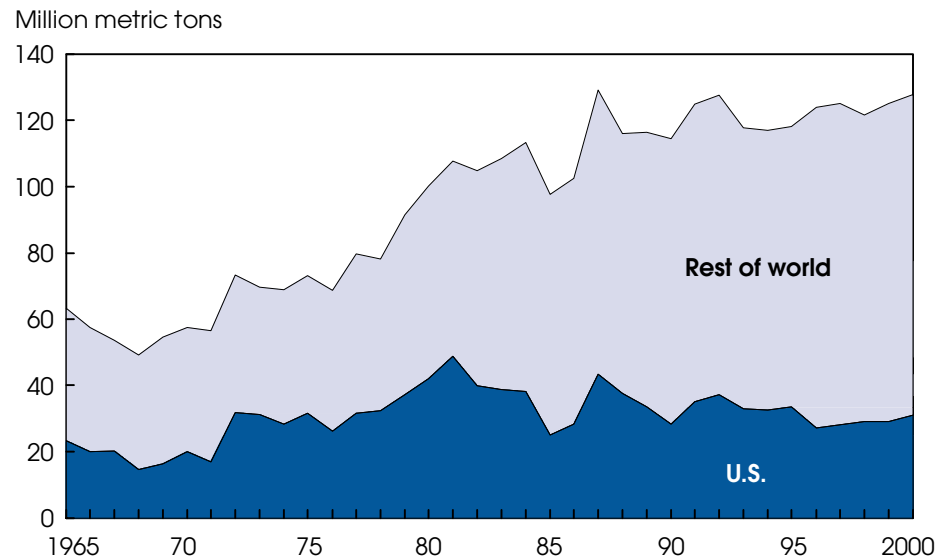
Emerging structural changes in buying patterns and in quality preferences could pose a further threat to the U.S. share of world wheat trade. The importance of quality (characteristics related to end use) varies among markets, with high-income, nonsubsidized markets generally more sensitive to quality in making wheat import decisions. In high-income countries, end-use characteristics are often more important than price.

In many countries where purchasing decisions are made largely by government entities, the goal is generally to buy the cheapest wheat available. Soft red wheat (SRW) varieties grown in the U.S. were developed for making flour for cookies, cakes, biscuits, and crackers. However, because of the abundant supply of SRW worldwide and its relatively low price, governments of lower income foreign countries often purchase SRW to be used in other products, such as breads. Movement toward privatization in recent years has elevated the role of smaller, non-government buyers, such as millers, whose wheat purchases tend to reflect the most desirable characteristics for the intended end use rather than primarily price.

Increased attention to various qualities of wheat could put some U.S. wheat, such as SRW, at a disadvantage relative to other wheat types. SRW fits nicely into some U.S. farm operations, particularly in much of the South and Midwest, because it can be doublecropped with soybeans or other crops.

Export competition will not abate in the foreseeable future, and low real prices (prices adjusted for inflation) will continue to pressure U.S. wheat producers. Agricultural policy reforms included in the EU's Agenda 2000 (AO May 1999 and October 1999) are expected to promote wheat production over other crops. EU wheat exports have become more price-competitive because of declining support prices and a weak currency, and the EU recently exported some wheat without subsidies.

U.S. Wheat Exports Fairly Steady, While Share of World Wheat Trade Declines



International marketing year beginning July 1.
1999 estimated. 2000 projected.

Economic Research Service, USDA

In addition, traditional exporters (Argentina, Australia, and Canada) are expected to continue to be very competitive. Other suppliers such as Eastern Europe and parts of the former Soviet Union (now the New Independent States) may also provide more export competition, especially if their infrastructure improves and they can upgrade the quality of wheat output while holding down costs.

Production Gains & Stocks Pressure Prices

The historical long-term downward trend in real grain prices reflects the successful development and dissemination of high-yielding varieties, as well as use of yield-enhancing agricultural chemicals and mechanical technology. In the early 1980's, the trend in U.S. wheat yields flattened out after steady gains since mid-century, but at the end of the 1990's, U.S. wheat yields spiked up. Nevertheless, over the past 25 years, gains in wheat yields, on average, trail gains for corn and soybeans.

Harvested wheat area in the U.S. has trended down since its peak in the early 1980's, in part because of declining

returns relative to other crops. Implementation of the Conservation Reserve Program in 1986 also took wheat acreage out of production.

The 1996 Farm Act further contributed to the fall-off in wheat acreage by eliminating the requirement to maintain base acreage of program crops in order to qualify for deficiency payments. Increased planting flexibility facilitated expansion of soybeans and corn into more traditional wheat areas, with little or no corresponding push of wheat into nontraditional growing areas. And more wheat land went into minor oilseeds such as canola. Loss of wheat acreage to row crops also reflects strong genetic improvements in corn and soybeans varieties that could be planted further west and north—areas with drier conditions or shorter growing seasons.

In the 1990's, some farmers in the dryland Plains areas switched to multicrop rotations that have decreased the frequency of wheat planting. For example, in Kansas, a typical wheat-fallow rotation is most commonly replaced by a rotation of wheat-grain sorghum-fallow, so that wheat is planted 1 year out of 3 instead of 1 out of 2. Studies from Kansas State University

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indicate that multicrop rotations produce markedly higher net returns, primarily because of the inclusion of higher-value but riskier crops in the enterprise mix.

Also influencing planting decisions in the 1990's was concern about widespread wheat disease problems, which may stem in part from switches to the more profitable activities of corn plantings and minimum tillage in traditional wheat areas in the Northern Plains. Both activities provide hosts for disease organisms.

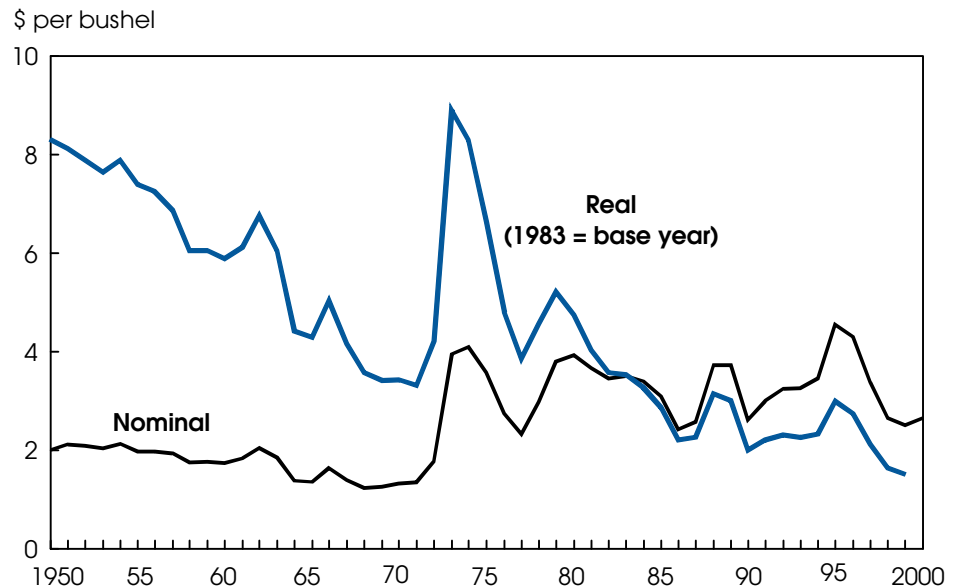
Although low prices have affected most agricultural commodities, higher productivity gains for crops like corn and soybeans, and cost reductions for soybeans and cotton, have partly offset sagging prices. Moreover, under the 1996 Farm Act, soybeans emerged with some additional program incentives—i.e., loan rates that afforded more revenue protection for soybeans than other crops when commodity prices went down in the late 1990's.

The pace of genetic improvement has been slower for wheat than for many other field crops, not only because of technical reasons and genetic complexity, but also because lower potential returns to commercial seed companies discourage investment in research. In the corn sector, for example, where hybrids are used, farmers generally buy seed from dealers every year. However, many wheat farmers—particularly in the Plains states—plant “bin run” or saved seed instead of buying from dealers.

Since potential returns from development and sale of new wheat varieties are relatively small, private firms limit their involvement in wheat breeding research. Therefore, the wheat sector is largely dependent on public research.

Innovation in cultural practices, moreover, may be less aggressive for wheat. For example, growth in soybean yields started to advance above trend in the late 1980's and early 1990's as farmers adopted narrow-row and drilled-planting methods to increase the number of plants per acre. In contrast, practices used in growing wheat have remained largely unchanged, although wheat planting equipment has improved.

U.S. Wheat Prices Trend Downward Since 1995



Season-average farm price. 1999 estimated. 2000 projected.
Economic Research Service, USDA

Domestic wheat prices respond not only to production levels, but also to holdings of U.S. and world stocks. When stocks are ample and prices start to rise, stocks may enter the marketplace, keeping prices from rising further. While government stockholding is aimed at supporting farm prices by withdrawing wheat from the market, private stockholding is motivated by the prospect of profiting from price fluctuations—i.e., withholding wheat from the market when prices are low and selling later when prices rise.

Farm legislation plays a role in U.S. stockholding patterns. For example, U.S. wheat stocks declined dramatically during the late 1980's following passage of the 1985 Farm Act which included provisions for generic certificates—to distribute government-held commodities in lieu of cash payments—and the Export Enhancement Program (EEP)—to subsidize sales of commodities abroad. A lower loan rate provided to farmers also helped slow the accumulation of government-held stocks. Drawdown of government-held stocks accelerated as droughts in 1988 (affecting spring wheat) and in 1989 (winter wheat) reduced production.

Commercially held stocks accounted for a relatively small share of total U.S. stock-

holdings, so when government stockholdings dropped substantially from the 1980's, total stocks declined sharply. By the early 1990's, the U.S. stocks-to-use ratio had fallen to near the world level.

Recently, however, U.S. wheat stocks held by the commercial sector have sharply expanded, and now make up an increasing share of U.S. stocks. The world stocks-to-use ratio has remained relatively stable, while the U.S. ratio rose at the end of the 1990's as wheat stockholders awaited a price rise.

World wheat stocks are forecast for the 2000/01 crop year at their lowest level since the mid-1990's. Yet with sizeable U.S. and EU wheat stocks, U.S. real wheat prices remain very low relative to that period. If global trade strengthens, domestic prices can rise as U.S. stocks are exported to meet the demand.

Longer-term price movement depends on balancing global demand with supply growth. For example, when the global stocks-to-use ratio reached a low during the 1994/95 crop year and prices spiked, wheat producers around the world responded strongly by increasing production. Then global demand weakened in

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some important markets as consumption growth slowed from the deepening Asian financial crisis. The result was low prices.

Challenges for the U.S. wheat sector will not abate in the foreseeable future. Other crops will continue competing with wheat for production resources, including land. Although wheat products have proven to be competitive with other foodstuffs for consumer dollars in recent years, low real prices due to foreign competition will continue to pressure U.S. wheat produc-

ers. Prices will also remain weak if global supply response outpaces development of broad-based global demand growth.

Research to develop new varieties and new growing methods may improve market competitiveness and increase the cost efficiency of wheat production. Improved varieties of U.S. hard white winter wheat, for example, were developed using traditional methods, and these hard whites may open new market prospects to U.S. producers by allowing them to challenge

the dominance of Australian white wheat in world trade. Development of wheat with a herbicide-tolerant trait promises significant benefits to spring wheat growers, but may also introduce some uncertainty in marketing. However, introduction of genetically modified varieties of wheat is still 2-3 years away, and the pace of seed supply expansion will limit the adoption rate. **AO**

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